6.1 & 6.2 Summary

Wednesday, May 07, 2014
2:23 PM

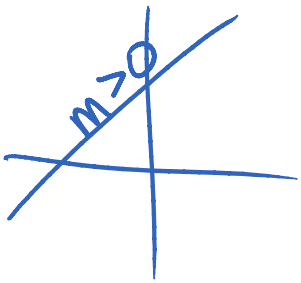
Polynomial Characteristics in General

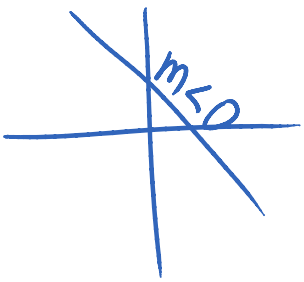
Linear

$y = mx + b$

- m: slope
- degree = 1
- b: y-int

#'s of x-int: 0, 1
#'s of y-int: 0, 1





end behaviour (left to right):
- $m < 0$: QII → IV
- $m > 0$: QIII → I

Domain: $x \in R$
Range: $y \in R$
} unless vertical or horizontal lines

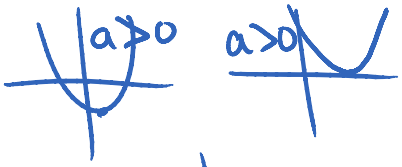
Turning Pts: 0

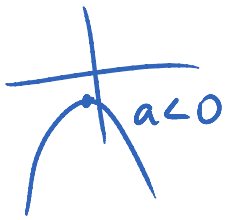
Quadratic

$y = ax^2 + bx + c$

- degree = 2
- c: y-int

x-int: 0, 1, 2
y-int: 1





End behaviour:
- $a > 0$: QII to QI
- $a < 0$: QIII to QIV

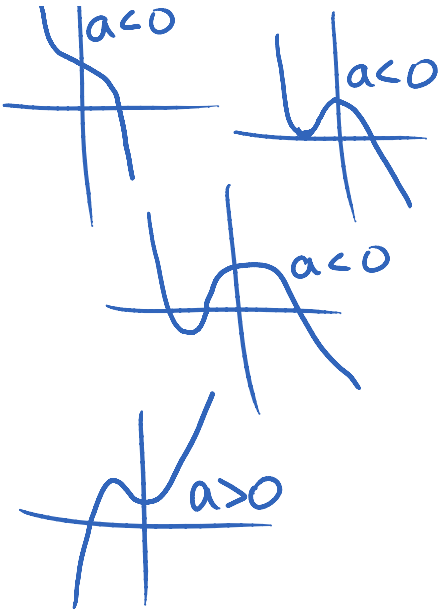
Domain: $x \in \mathbb{R}$
Range: $y \le$ max or $y \ge$ min
# of turning points: 1

Cubic

$y = ax^3 + bx^2 + cx + d$

- degree = 3
- d: y-int

1, 2 or 3 x-int
1 y-int



degree = 3

End behaviour $a<0$ QII to QIV $\}$ same as linear
$a>0$ QIII to QI $\}$

Domain: $x \in \mathbb{R}$

Range: $y \in \mathbb{R}$

# of turning pts: 0, 2

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2 other patterns

a) max # of x-intercepts = degree of function

b) max # of turning points = one less than the degree.